

ORION

CREW EXPLORATION VEHICLE

WEEKLY ACCOMPLISHMENTS



10.15.10



Installation of the Thermal Protection System Structure (TPSS) to the Crew Module (CM) Ground Test Article (GTA) continues at the Michoud Assembly Facility (MAF) in New Orleans, Louisiana. The GTA team recently drilled and installed the cone TPSS brackets (shown right) before rotating the GTA 0.120° for a best fit of the aft gussets and barrel TPSS bracket hardware. The team has drilled approximately half of the 842 total holes that need to be drilled to install the TPSS aft gussets and barrel brackets.

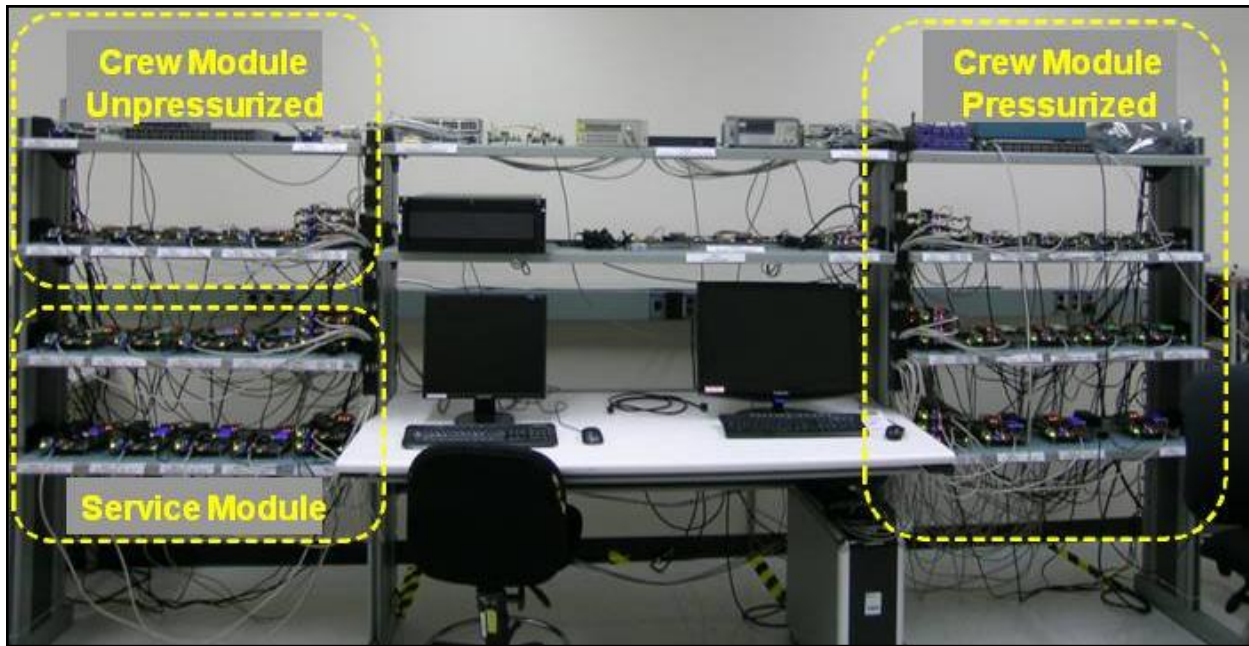



The Low Impact Docking System (LIDS) team successfully tested the third and final Docking Mechanism Jettison System (DMJS) Linear Shaped Charge (LSC) prototype (shown left) at the Engineering Propulsion Lab in Waterton, Colorado. The test confirmed the previous results of complete 360° separation of the target material and the data confirms lower shock levels than analytically predicted. Secondary data was collected to assist in the environmental characterization and development of the connectors, thermal protection system (TPS), and LSC backer ring. The DMJS functions to separate the LIDS prior to entry and is critical to the successful entry, descent and landing of the Crew Module.



The new Data Acquisition System (DAS) to support water impact testing was received at Langley Research Center in Virginia. This additional capability will increase the DAS data channel count to 608 total channels and will support planned testing for the Boilerplate Test Article (BTA) as well as the Crew Module Ground Test Article (GTA) water landing drop testing that will occur in late 2011.





 The Orion Avionics, Power and Software (APS) team successfully completed a hardware to software integration milestone which included a flight software release running on Orion flight computer brassboard hardware for the first time. The milestone included flight computer communications with simulated Orion systems components over an off-the-shelf representation of the Orion Data Network. In addition, the APS team demonstrated the Honeywell Network Integration Laboratory (shown above) located in Glendale, Arizona and the in-development desktop environment that the community will use for software integration and test activities. This milestone was a key precursor to a higher-fidelity integration milestone, scheduled for next February, which will be a closed-loop demonstration of Orion atmospheric re-entry. The February integration milestone will be conducted in a laboratory environment that includes the next flight software release running on a complete flight computer brassboard, the Orion simulation software running on in-development simulation host hardware, along with Ground Support Equipment that will provide test engineers with a command interface, telemetry displays, and data archival capabilities.

Communications and Public Outreach

The Orion Launch Abort System Pathfinder (shown right and in banner on first page) continued its cross-country journey with a recent stop at the Great Lakes Science Center in Cleveland, Ohio. Shown in the image talking to a Cleveland school group is Joe Mayer of Lockheed Martin along with Astronaut Mike Foreman and Jim Free with the NASA Glenn Research Center. The NASA/industry team spoke with visitors, students and media who came out to see the LAS. The next stop on the tour is the Franklin Institute in Philadelphia, Pa., Oct. 16-17, followed by the EarthFest at Langley Research Center in Virginia Oct. 23-24 and concluding at the Kennedy Space Center Visitor Center in Florida on Oct. 26.





A Japanese TV crew toured several Orion facilities this week to film a segment about NASA and space exploration for a popular family program called SEKAI FUSHIGI HAKKEN, which has been broadcast nationwide for the past 20 years on the Tokyo Broadcasting System (TBS). This special episode will showcase the last shuttle missions and provide an overview of future NASA programs. The film crew interviewed Lockheed Martin Orion engineer Masahura “Masi” Iwasa and Deputy Program Manager Larry Price at the Exploration Development Lab in Houston. In addition, the crew interviewed NASA astronaut Lee Morin at the Orion simulation dome in Building 16 as well as Lockheed’s Josh Hopkins and Bill Johns at the Space Operations Simulation Center in Denver.

